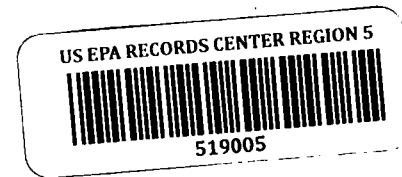


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Refinery Prod 1/24/90
Superfund / Tech Repts



Science Applications International Corporation
An Employee-Owned Company

January 24, 1990



931038

Mr. Hank Konzelman
Project Manager
Illinois Environmental Protection Agency
Division of Land Pollution
2200 Church Hill Rd.
P.O. Box 19276
Springfield, Illinois 62794-9276

RECEIVED

JAN 26 1990

IEPA/DLPC

Dear Mr. Konzelman:

This letter summarizes the work performed by SAIC January 8 - 19, 1990 at the Refinery Products site, Shiller Park, IL. A well development summary is provided as table 1, and our interpretation of the well locations and numbering is provided as figure 1.

As requested, SAIC provided personnel to develop five wells at the Refinery Products Site in Shiller Park IL. D. VanWinkle was on-site January 8 - 12, 1990, and G. Cagle was on-site January 8 - 19, 1990. They were assisted by B. Mathis from IEPA whom supplied all the needed equipment. All wells were either hand bailed with dedicated teflon bailers or pumped using the IEPA Geoguard Gas Driven Pump. With the exception of G101S, at least three well volumes of water were removed from each well as required by the Project Outline. However, because no pH, specific conductivity, or temperature meter was available, these measurements were not collected as agreed by D. Vanwinkle(SAIC) and H. Konzelman(IEPA) over the phone(1-8-90).

Because of a visible oily sheen on most removed groundwater, and oil in the sediments removed from the bottom of all the wells, all development water was contained in 55-gallon drums. The drums were labeled, and left on-site. Since no empty drums were initially available, development water was first put into drums containing the drill cuttings until empty containers were made available. Development water was also temporarily stored in 85-gallon overpac containers until the remaining new 55-gal. drums were delivered. The water in the overpacs was then pumped into 55-gal. drums. The overpacs were decontaminated(with Trisodium Phosphate soap and acetone, and rinsed with a steam cleaner), allowed to dry, and returned to the Paxton site in Southeast Chicago by B. Mathis(IEPA).

Prior to the arrival of SAIC and IEPA on-site, the protective cover of G103S and G104S had been broken into and the wells were open. Both inner well casings were uncapped, exposing the well interior to further vandalism and the natural elements. B. Mathis(IEPA) drilled holes into the sides of the protective covers so the wells could be locked. G103S showed no damage, but G104 had had foreign object dropped into the well. Three cat tails (reeds) were fished out of the well, but the well still has a rock or other sharp object at the bottom which could not be removed.

G101S was hand bailed using a teflon bailer. Because of very slow recharge, only about one gallon per day (gpd) could be removed. Therefore the total amount of water purged was only 18 gallons, and ending turbidity was cloudy. The extracted muddy water's surface had a slight oily sheen and a small amount of oil in the sediments.

G101I was developed using the geoguard pump at an average pumping rate of 0.9 gallons per minute (gpm) for a total removal of 240 gallons, and clear groundwater was obtained. The muddy discharge water's surface contained a slight oily sheen, and very noticeable oils in the sediments.

G103S was hand bailed using a teflon bailer 2-4 times a day until the last day, when it was pumped hourly using the geoguard pump. The well yielded 10 to 15 gpd, and produced clear groundwater when developed. The extracted muddy water's surface showed a slight oily sheen, and small amounts of oil were present in the sediments.

G104S was hand bailed using a teflon bailer 1-3 times a day for a total removal of 47 gallons. Slow recharge of the well only allowed for bailing of about 5 gpd. Ending turbidity was cloudy, and the muddy discharge water's surface showed a slight oily sheen and small amounts of oil in the sediment.

G105I was initially found to have 0.3 feet of floating product on top of the water table, and a noticeable petroleum smell. The well was hand bailed dry 4 times until no obvious oil was seen. The well was then scrubbed with a brush and Trisodium Phosphate and distilled water mix. Approximately three gallons of soapy water was used to clean the well. Development continued, and 100 gallons of water was evacuated using the geoguard pump until clear groundwater was obtained. The total amount of water removed was 141 gal. After cleaning, the muddy discharge water had no obvious sheen, but still had small amounts of oils mixed in the sediments.

If you have any questions regarding this letter or require any additional work please feel free to contact me at 619-535-7438.

Sincerely,


Thomas R. Fogg, Ph.D.
Division Manager

c.c. D. Tolen (IEPA)
B. Bidwell (SAIC)
G. Cagle (SAIC)
J. Petrilli (SAIC)
D. VanWinkle (SAIC)

Table 1. Well development Summary for Refinery Products Site,
Shiller Park, Illinois, January 8-19, 1989

Well ID	G101S	G101I	G103S	G104S	G105I
Completion Date	1-19-90	1-13-90	1-18-90	1-19-90	1-17-90
Development Method	Bailer	Pump	Bailer Pump	Bailer	Bailer Pump
1-9-90 Water Level (Feet BTOC)	5.49	17.40	12.46	3.46	19.47
Total Depth of Well (Feet BTOC)(a)	17.06	79.44	37.20	16.98	77.26
Well Volume (Gallons)(b)	9.43	50.59	20.17	11.03	47.13
Total Amount Purged (Gallons)	18	240	125	47	141
No. of Volumes Purged	1.9	4.7	6.2	4.3	3.0
Ending Turbidity	Cloudy	Clear	Clear	Cloudy	Clear
Pumping Rate	1-2 gpd	0.9 gpm	10-15 gpd	5 gpd	25 gpd

(a) Total depth of well after development

(b) Volume of well and borehole assuming a 50% porosity for the sandpack
and a 6 in. borehole.

BTOC - Below top of Casing

gpd - Gallons per day

gpm - Gallons per minute

Bailer - 11 Teflon Bailer

Pump - Geoguard gas driven pump

NON- RESPONSIVE

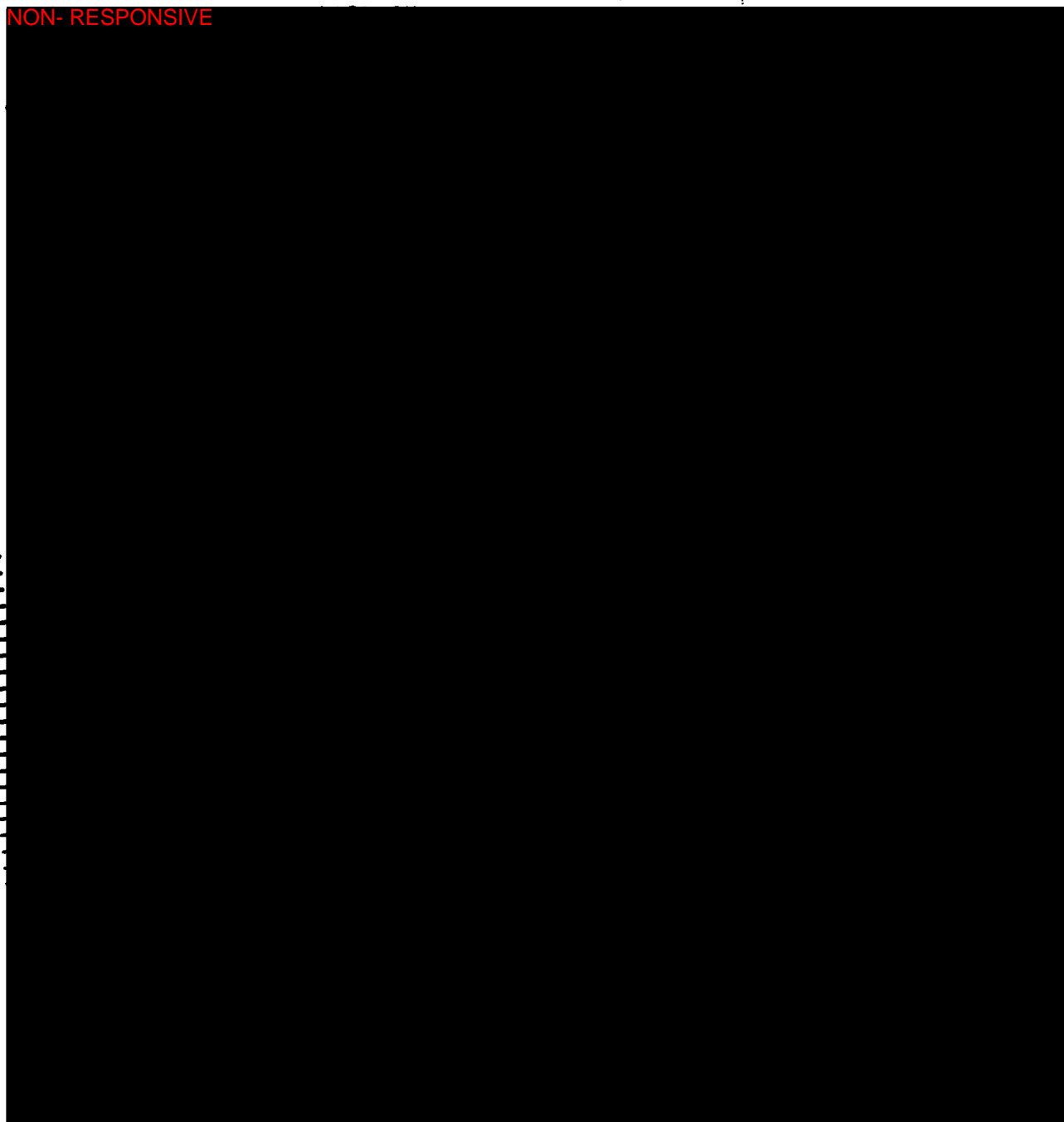


Figure 1. Interpreted Well Locations At The Refinery Products Site